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REPORTS

The present number of the Plant Disease Bulletin is compiled from the following sources:

1. Reports of collaborators as to the status, on August 15, of the important diseases of cotton, sweet potato, flax, oats, and grape. Special forms were supplied for these reports. The one for oat smut was sent to all states while the other blanks were directed only to states where the particular crop was of importance.

2. Special reports from collaborators on diseases of potatoes, beans and wheat, as of August 1, received too late to be used in the August 15 number of the Bulletin.

3. Additional data gathered from various sources as to the present occurrence of certain diseases of economic plants.

SPECIAL REPORTS

ALFALFA

Phyllosticta medicaginis has been very severe this year in Idaho on alfalfa. It seems to be quite destructive in the state, causing losses varying up to 50%. In some cases there is almost a total loss. A large amount of winter killing has been reported from various places.

In some parts of south Idaho white leaf spot is prevalent on weak plants in old fields but it is not found in young fields to any extent. Bacterial stem blight is found in all parts of Idaho, causing more or less damage to the first crop each year.

APPLE

Further reports on apple scab indicate that the disease is very abundant in northern Idaho where control measures are not employed.

From Oregon Barss writes "Scab appeared on the foliage of apples and pears abundantly in the early part of the season in western Oregon but fruit infection will be much less than for the past two years on account of the fact, we think, that the season was a month late and dry weather came on quickly and remained without interruption. This allowed but a short period favorable for

scab infection and development. The disease is general but growers are becoming more expert at control of the disease." - H. P. B.

BARLEY

In eastern South Dakota there is about 1% of the Helminthosporium stripe disease. Some net blotch and spot blotch occur each year.

The Rhynchosporium disease is quite common in various parts of Oregon. The economic importance of the disease is questionable.

BEANS

Vermont: The bean yield will be cut to some extent as a result of the dry weather of the last days of July and those of the early part of August.

Anthracnose caused by Colletotrichum lindemuthianum.

Connecticut: First reported this season July 22 from four different places. Early in the season there was considerable complaint but not much lately. The seed used this season was not as good as the average on account of scarcity. Considerable stem infection. Varieties most affected Golden Wax; least affected, Hodson Wax.

Oregon: None found this year but in the past some has existed along the coast in unimportant quantities. The usually dry Oregon summers appear to be unfavorable for development of the disease.

Bacterial Blight caused by Pseudomonas phaseoli.

Michigan: "The indications are that bacterial blight of beans will be very serious this season. The combination of blight and wet weather during early summer will cause quite a shortage in the crop." From Michigan Department of Botany News Letter.

Oregon: Specimens of blight have been received at the Oregon Station from Hood River, Yamhill and Benton Counties. This is the first occurrence in the state as far as is known to men at the Station. In most all cases the source of the disease seems to be traceable to out of state seed. Oregon-grown seed is thought to be entirely free. No spread of the disease from affected to unaffected fields has been observed thus far. The total amount of blight is very insignificant.

Mosaic.

Oregon: "What appears to be a mosaic has appeared in various patches in different sections. How general it is we do not know. In some cases it is serious. Plants do not bear well if at all. The leaves are mosaic patterned and puckered. Plants are not greatly stunted although somewhat so at times." -H. P. B.

Other Diseases.

Texas: Principal trouble is leaf rust, especially serious in south-west section. 25-30% defoliation. Estimated loss 10%. Usually occurs in the dryer sections but is widely distributed on account of drought.

BEETS (Sugar)

Rhizoctonia Rot.

Michigan: "It is to be expected that the *Rhizoctonia* rot of sugar beets will be of wide occurrence this year. Specimens have been sent in from three counties." From Mich. Dept. of Botany News Letter.

COTTON

Anthracnose caused by *Glomerella gossypii*.

Alabama: 75% or more of the cotton growing area is overrun. Very little is done along the lines of control. Some resistant varieties are being grown.

Louisiana: Disease common but not so prevalent as usual due to the abnormally dry season. No control measures are being practiced.

North Carolina: Disease just beginning to manifest itself. It is probably quite general.

South Carolina: "Anthracnose was prevalent early in the season on seedling cotton and caused about the usual amount of damage at this time. The first report of disease on the bolls came in from Horrell Hill in Richland County on July 27. The specimens which were sent in indicate a serious outbreak as the small bolls were badly diseased. The weather has been especially favorable for anthracnose thus far (August 1). County agents are pushing control measures."- H. W. B.

Tennessee: Not observed this season. It is too early to expect it in Tennessee.

Texas: Very prevalent everywhere cotton is grown. It is estimated that there is about 20% loss this year. Seed treatment is being urged to some extent.

Wilt caused by *Fusarium vasinfectum*.

Alabama: The disease is very bad this year in regions where it occurs. The land is infested in practically the whole southeastern section of the state. There is probably no wide increase in the infested area over last year. Practically all the cotton raised in the southeastern part of the state is a resistant variety.

Louisiana: Disease extremely severe this year on infested land, it being much worse than usual. The infested area is large. Resistant varieties are being employed very little as there is no wilt-resistant variety that can be recommended for Louisiana conditions.

North Carolina: Complaints of the disease just starting to come in. Several county agents have cooperators who plant resistant varieties.

South Carolina: Disease common and in about the same amounts as usual. It is estimated that from 20,000 to 25,000 acres of land are infested with the organism. This season the area has increased from 5 to 10%. Resistant varieties are being planted on 12,000 to 18,000 acres.

Tennessee: Not troublesome in state.

Texas: Fairly prevalent this year, probably more than last. No resistant varieties being grown.

Potash Hunger caused by Lack of Potash.

Alabama: The absence of potash fertilizers has increased the loss from so-called "rust" to some extent. The disease is more or less restricted to what is known as the "Black Belt" in Alabama.

Louisiana: There is very little of the trouble in Louisiana soils as most of them contain sufficient potash.

Tennessee: Trouble of some kind has been reported from two counties, probably due to this cause.

Texas: No complaints of this trouble and none has been noticed.

Angular Leaf Spot.

Alabama: Disease very prevalent over state this season, due to the wet, rather cold spring and summer. Loss hard to estimate.

Louisiana: Disease just beginning. Dry weather prevented its development earlier.

North Carolina: No complaints have come in yet. Last year there were many reports.

South Carolina: Present in every cotton field. It was found on James Island causing serious damage to Sea Island cotton. Seasonal conditions are not as favorable for spread as last year. The disease reduces leaf areas to considerable extent and destroys bolls under certain conditions.

Tennessee: Disease is always present. It is hard to give an estimate of the damage done by it, but it is very considerable.

Texas: Very prevalent, accompanying anthracnose.

Root Knot caused by *Heterodera radicicola.*

Alabama: Found everywhere. Final results of a survey of the whole cotton area would show that the loss due to root knot surpassed the loss from all the other diseases of cotton combined.

Louisiana: Does not usually cause much damage.

South Carolina: Common and widespread. Nematodes cause considerable damage throughout the coastal Plain region and in many localities in the Piedmont district.

Tennessee: Not reported this year. Probably never very serious although it may have been overlooked.

Texas: Prevalent in some districts where wilt is found.

Other Diseases.

Texas: Texas root rot very prevalent in the black lands.

GOOSEBERRY

Powdery Mildew (*Sphaerotheca mors-uvae*).

New Mexico: It is reported that 75% of the gooseberries in Colfax County are affected with powdery mildew. Loss is very great this year. First time disease has been reported from Colfax County.

GRAPE

Anthracnose caused by *Gloeosporium ampelophagum*.

Reports of the occurrence of this disease have been received from only two states. Questionaires were sent to the twelve important grape-producing states.

North Carolina: "Disease everywhere present. About half the grapes in the college vineyard of several acres are rotten. This is typical of what I have seen elsewhere." -F. A.W.

New York: First appearance July 18 at Gilbertsville. Only two reports of the disease received thus far but one of these states that there is a 50% loss in one vineyard.

Other Diseases.

New York: Black rot has been reported twice, dead arm once, and downy mildew from three counties.

Ohio: A normal amount of black rot is present in most vineyards. The amount of powdery mildew is greatly increased. Some crown gall and dead arm.

Virginia: Quite abundant on several varieties at the Truck Station at Norfolk. It occurs on the fruit and leaves.

FLAX

Wilt caused by *Fusarium lini* has been about as prevalent as usual in Minnesota. First noted about June 15 on University Farm, St. Paul. It is very severe on soil that has grown flax for a number of years. Apparently selection of plants grown on wilt soil is the best control measure. Seed treatment and rotation are fairly effective.

Rust caused by *Melampsora lini* has not been reported as yet from the state of Minnesota where it is of occasional economic importance. Careful observational evidence seems to indicate quite clearly that the disease reduces the yield.

Canker is probably of minor importance since very little of the Minnesota flax crop is grown on dry land. Reported only once from the state this year.

MELON

Watermelon anthracnose caused by *Colletotrichum lagenarium* is reported by Mr. J. L. Seal in Barnwell and Oconee Counties, South Carolina, where it is

causing complete defoliation of the plants and is also attacking the melons. The disease is usually prevalent in all sections of the state and it is suspected as being widespread this season. No reports other than the ones mentioned have been received.

"Fusarium wilt of cantaloupes and melons is very common in Dona Ana County, New Mexico, and most fields seem to have some plants affected with this disease. The total loss for this year will not be very great, but I expect that by next year from 20 to 40% of the crop will be affected with the disease if the truck growers do not practice crop rotation. Isolated reports of the same disease have been received from Grant and Luna Counties." -F. C. W.

OATS

Smut caused by *Ustilago avenae* and *U. levis*.

Alabama: Disease somewhat worse than last year on account of the cold, wet spring. 25% of seed oats treated in state. Previous to a campaign conducted last fall less than 5% of the oats were treated. Whole state needs extension work along this line.

Colorado: There is a possible increase over last year with 2 to 10% loss in untreated fields. Only a few farmers are treating their seed, there being only about 7 to 9% of the oats treated last spring.

Connecticut: Oats not generally grown in the state. As a rule smut is not abundant enough to merit treatment. No complaints this year.

Indiana: More than last season, probably because of wet weather at planting time and after. Losses range from 0 to 14% in untreated fields. About 20% of seed oats in state treated. Demonstration work needed in non farm bureau counties.

Louisiana: Probably more smut this year than last. First appeared about last of April. Very little seed treatment done. Disease seems to be worse in the northern part of the state.

Maine: Does not seem to be quite as much as usual. It does considerable damage every year. Aroostook County is most in need of extension work in seed treatment on account of the large acreage grown in rotation with potatoes.

Michigan: Oat smut seems to be more prevalent than last year, perhaps on account of the wet spring. The percentage of smutted heads in untreated fields ranged from 10 to 30% with an average of nearly 15%. It is estimated that 25% of the oat seed was treated this spring. Extension work needed in non farm bureau counties.

Minnesota: Average amount of smut this year. First appeared about July 10. About 10% loss in untreated fields. Every county needs work along the line of seed treatment.

Missouri: Disease common. Treatment effective where used.

Nebraska: About the same amount as last year, with an average of approximately 5% smut in untreated fields. It is estimated that about 50% of the seed oats in the state were treated last spring. All counties where there are no county agents are in need of seed treatment demonstration.

New York: First appeared this season about July 16. From reports received from thirteen counties it is estimated that there is approximately 9% loss in untreated fields and ½% loss in fields where the seed was treated. It is further estimated that about 15% of the seed oats were treated this spring.

North Dakota: About the usual number of fields infested. Damage done is apparently lighter, probably on account of the dry weather at sprouting time. It is estimated that the loss in untreated fields ranges from 1-40%. 50-75% of the seed oats were treated. Most of the farmers in the state know how to handle seed treatment.

Ohio: Apparently less this year than last, due to the increased amount of seed treatment. First appeared about July 15. 2-5% smut in untreated fields. 25% seed oats treated last spring. Special efforts have been made by county agents to get farmers to treat seed. Literature from the Experiment Station and College of Agriculture has been freely used.

South Dakota: Scattering throughout the state but of extremely minor importance. Most farmers treat seed.

Tennessee: From 1-6% in 1916. About the same this year. First appearance about May 15. Extension work on seed treatment needed all over state.

Texas: Smut is increasing in amounts. Little seed treatment is done in the state. The Pan Handle section is most in need of extension work.

Vermont: 7% loss this year as compared with 12% last year. Difference due mainly to weather conditions. First appeared Aug. 1. Reports from county agents show that in one county 50% of the seed was treated. Practically all the larger growers treat their seed.

Virginia: Counts show an average loss of about 10% in untreated fields. Very small percent of oats treated. All counties need demonstration work along lines of seed treatment.

West Virginia: Disease apparently somewhat worse than last year. The matter of seed treatment has been taken up to some extent with county agents. Counties most in need of extension work on seed treatment are Randolph, Preston and Brooks.

Wisconsin: Prevalent in about the same amounts as last year, plus or minus 10% in untreated fields. Only a small percentage of seed oats were treated this spring in unworked territory. The county agents are handling the work very well in counties where there are farm bureaus. In some communities nearly everybody treats seed.

Other Diseases.

Bacterial blight of oats has done considerable damage in Idaho this season. One grower reports one-third loss.

Complaints of blighting of lower florets of the panicle are common in Pennsylvania. The trouble is thought to be due to anthracnose.

PEARS

Drought Injury.

Oregon: "Bartlett pears have been recently sent in from various places in southern Oregon, affected with a blackening at the blossom end. Sometimes the discoloration included a considerable portion of the fruit. There is a breaking down of the tissues immediately beneath the surface in the affected regions but the effect is that of a dry and not a soft rot. No parasitic organism is present and everything indicates it to be a result of weather conditions related to transpiration and moisture supply." -H. P. B.

POTATO

Late Blight caused by Phytophthora infestans.

Colorado: None reported as yet.

Connecticut: Disease first noticed July 24 at South Manchester. Has been seen thus far, August 15, only in two places and is present in only small amounts at the present time. The early summer weather was favorable for development but after the middle of July it became unfavorable with the result that the disease has been checked. The most of the damage that will be done now if the disease gets started will be in rotting the tubers or tops that are still green.

Maine: L. O. Kunkle, returning from an excursion to the Maine potato fields, reports that late blight is unusually prevalent in Aroostook County. Inhabitants say that the disease is the worst it has been in years. All varieties are being attacked and unsprayed vines are practically dead. Those fields that have been well sprayed are remaining green although there is more or less disease in them. The weather for the past few weeks has been unusually wet for northern Maine at this time of the year. It is estimated that the Aroostook crop has been cut 25% already on account of blight. Not much rot has developed thus far. Kunkle states that practically no Phytophthora blight could be found farther south in the vicinity of Portland and east into the state of New Hampshire.

"September 1. Late blight has appeared all over the state and is

more prevalent and destructive than it has been for years previous. Unsprayed or poorly sprayed fields have been killed. Even the best of the commercially sprayed fields show some to considerable blighted leaves. Rot in the field has already started where foliage has blighted worst. Continued cool cloudy weather practically the entire season has been favorable for the disease except in the southwestern part of the state where there has been less moisture. Blight was first noticed July 23 at Orono and Lincolnville." W.J.M.

Missouri: Very little reported.

North Dakota: No late blight has been observed or reported in the state.

Oregon: No late blight reported as yet. It was prevalent last year along the coast and in Multnomah County along the Columbia River. In general potato tops are small and prospects are for a very small yield and small sizes. The unusually late cold spring without much very wet weather followed by the long drought period with high temperatures early in July have been unfavorable for growth.

Pennsylvania: No late blight reported as yet.

Texas: Late blight was practically absent from the state on crop that has been harvested.

Tip Burn.

Connecticut: "Tip burn and prematurity of the vines is very bad in certain fields that lacked moisture. The three hot days during the last of July and first of August killed half the leaves in many fields. Late planted potatoes were least injured and certain localities helped to prevent injury in those places." -G. P. C.

Pennsylvania: Tip burn has developed considerably.

Vermont: "Tip burn on potato leaves has appeared in great quantity and will reduce the yield considerably. It seems to be worst in the Champlain Valley and in some fields has taken 50% of the foliage. The potatoes in the mountain regions were not as far advanced and were not hit so hard. I have had reports of it from all parts of the state. The dry, hot weather of the early part of the month checked fungous diseases that had started during July." B. F. L.

Powdery Scab caused by *Spongospora subterranea*.

An examination of Maine potato fields by L. O. Kunkle, of the Bureau of Plant Industry, has led him to believe that powdery scab will be common in Aroostook County this year. In infested fields the disease is just coming on the tubers. Rainy weather is believed to have been very conducive to infection.

Early Blight caused by Alternaria solani.

Michigan: The disease is causing considerable damage in Wexford and Missaukee Counties. In some fields near Cadillac as many as 70% of the plants were severely attacked.

Wilt Diseases.

Michigan: Fusarium wilt of potato is reported by Levin as especially severe near Detroit where it has considerably reduced the yield of the early crop.

Oregon: Wilt due to Verticillium albo-atrum has been encountered as early as July and appears to be reducing the yield to an appreciable extent in some fields.

RYE

Ergot caused by Claviceps purpurea.

Connecticut: Apparently more abundant than usual. Found at Storrs this year in amounts varying from 1 to 5%.

STONE FRUITS.

Peach Leaf Curl caused by Exoascus deformans.

New York: Leaf curl has been unusually severe in New York this season. Reports as to the prevalence of the disease have been received at Ithaca from 32 plant disease reporters in the state. 21 reporters state that there is more curl than last year, 5 estimate about the same amount, and 6 believe there is less. The records of less disease come from the larger peach-growing sections where spraying is becoming more efficiently practiced. The estimate of percentages of diseased leaves on affected trees show an average of 48% in all orchards. On unsprayed trees nearly 90% of the leaves were more or less curled and on sprayed trees the percentage of affected leaves varied from none to as much as 60%. More and more growers are taking up fall spraying in New York. The results of fall spraying this season were superior to those secured from applications in the spring.

The following tabulation of varietal susceptibility was prepared from reports sent to Collaborator H. H. Whetzel in New York by his reporters in the field:

Variety	Number of reporters listing variety as:		Variety	Number of reporters listing variety as:	
	Susceptible	Resistant		Susceptible	Resistant
Elberta	16	1	Triumph	1	0
Carmen	3	2	Early Crawford	0	4
Late Crawford	5	1	Fitzgerald	0	3
Champion	3	0	Salway	0	2
St. John	3	1	Crosby	0	1
Greensborough	2	1	Dewey	0	1
Belle	1	0	Hill's Chili	0	1

Oregon: "Peach leaf curl has appeared in its worst form in all parts of the state where spraying was not done. The long delaying of blossoming period kept the trees in a susceptible state for a longer period than usual. Proper spraying in the winter was just as effective as ever." -H. P. B.

Bacterial Gummosis caused by Bacterium cerasi.

Oregon: "This disease appeared this spring in the worst form in many years. A large amount of damage was done to trees of young bearing age, which is unusual. While sweet cherries were most commonly and seriously attacked, yet prunes and peaches suffered to an extent which we have never noticed before. The increased damage done this year is attributed to the fact that the trees had one month more dormancy in the spring than usual during which time temperature was high enough for bacteria to work." H. P. B.

Drought Effects.

Oregon: "Drought effects or what appears to be abnormal conditions relating to evaporation and moisture supply balance are making themselves evident in many sections and in different fruits. Prunes are affected by the appearance of watery looking spots on the surface followed by the exudation of drops of gum under pressure from such spots on the fruit. The watery spots in the flesh are always accompanied by the death of a cluster of cells often of very slight extent in the region of the vascular net below the surface of the fruit. This phenomenon has occurred before but never has been more prevalent in all the prune sections of western Oregon. The total damage is not known. Continued dry, hot weather with frequent breezes is thought to account for this." -H. P. B.

Leaf Spot caused by Coccomyces hiemalis.

Oregon: The Cylindrosporium leaf-spot of prune which was so serious in central Willamette Valley last year is very inconspicuous this year.

Brown Rot caused by *Sclerotinia cinerea*.

Oregon: There is less evidence of this disease than has been seen for many years. Blooming time was followed by hot, dry weather that has been very unfavorable to development.

Virginia: Abundant near Norfolk on peaches.

Root Rot of Cherry.

Michigan: A root rot of cherry apparently due to a species of *Thelephora* has been brought to the attention of the plant pathologists at the Michigan Experiment Station.

SWEET POTATO

The first paragraph under each of the following sweet potato diseases were supplied by the Office of Cotton, Truck and Forage Disease Investigations. It is a general statement of occurrence and losses as far as present knowledge goes.

Stem-rot caused by *Fusarium hyperoxysporum* and *F. batatatis*.

Most prevalent in New Jersey, Delaware, Maryland, Virginia, Iowa, Kansas and Illinois, and locally in other states. Annual loss 5-10%.

Alabama: No observations. Never has been called to attention.

Louisiana: This disease was observed for the first time in the state when it was found in a field at Hammond, Tangipahoa County. It was brought in on cuttings from Georgia. The field was in bad shape.

New Jersey: Disease occurs in state everywhere sweet potatoes are grown.

North Carolina: The disease occurs in the state in the coastal plain area. It was plentiful last year but has not as yet been observed this season. No control methods are practiced.

South Carolina: Disease increasing in the state. This season it has been reported from Oconee, Newberry, McCormick, Greenwood, Saluda and Lexington Counties. Control measures are being employed only to a limited extent.

Tennessee: Disease occurs in state but does not cause serious loss. It has not been observed this year. It will probably increase in amount from year to year as sweet potatoes are grown continually on the same ground. No control methods are employed.

Virginia: Disease occurs in Accomac, Norfolk and Princess Anne Counties and may also be present in others. This year it has been observed at Lasley, Accomac County, and Diamond Springs, during July and August. Susceptible varieties are Little Stem Jersey and Big Stem Jersey. Little data have been collected as to the resistant varieties. Loss this year less than 2%. The disease is on the decrease (Va. Truck Exp. Sta. Bul. 22) Hill selection is being employed quite widely. This method has reduced disease from 90 to 2% in some cases.

Foot Rot caused by *Plenodomus destruens*.

Occurs in Virginia, Ohio, Iowa and Missouri. A serious trouble in Virginia, Ohio and Iowa. Annual loss in states where the disease occurs as high as 30%.

Tennessee: Does not occur.

Virginia (Truck Station): Disease occurs in Accomac, Norfolk, Princess Anne Counties. It may be present elsewhere. It has been known to growers on the eastern shore of Virginia for forty years. (First called to attention of science by Dr. Harter in 1912). The disease is not as abundant or serious this year as usual, probably due to the more general use of recommended control measures. In 1917 the highest counts thus far (August 15) have been 10% in one field. In 1915 and 1916 many fields showed over 50% foot rot. Big Stem Jersey practically only variety affected.

White Rust caused by *Albugo ipomoeae-panduranae*.

Common in Virginia, Maryland, New Jersey and Delaware. Usually common each year where sweet potatoes are grown. Annual loss probably 1%.

Alabama: Disease common but not very serious.

Louisiana: Not noticed this year as yet but it is always present and widespread but doing very little damage.

New Jersey: Disease has appeared this year but is of no importance.

North Carolina: Disease very general this season. It was bad last year.

Tennessee: Has not been seen this year. Is usually common but of little importance.

Virginia (Truck Station): Disease not as abundant as in 1916 when it was very prevalent. First appeared this year late in July. Disease is probably favored by cool moist weather although this point has not been definitely worked out.

Leaf Blight caused by Phyllosticta batatas.

Common throughout the South each year. Loss, if any, from the disease very slight.

Louisiana: Not noticed this season but is probably present. Every year it occurs but causes little damage.

New Jersey: Has appeared this year but is of no importance.

Virginia (Truck Station): Disease abundant this year. Not as prevalent in 1915 and 1916. Date of first appearance July 15. The large amount of rain was apparently favorable. Observed on all commercial varieties but most abundant on the Big Stem Jersey.

Leaf Spot caused by Septoria bataticola.

Virginia, Maryland, New Jersey, Delaware, Iowa, and locally in other states. Occurs each year and occasions no loss.

Alabama: Very common. First appeared July, 1917. Prevalent this year due to cold, wet summer. There appears to be some differences in the susceptibility of varieties to disease.

New Jersey: Disease has appeared this year but is of no importance.

Virginia (Truck Station): Disease quite abundant. Has been known to exist since 1912 at least. First appearance this year July 15. Excessive rainfall this year apparently favorable. Big Stem Jersey worse affected

Black Rot caused by Sphaeronema fimbriatum.

Occurs throughout the United States where sweet potatoes are grown. Annual loss 5-10%.

Louisiana: Black rot occurs to some extent every year but is usually not severe.

New Mexico: Black rot has been reported from Roosevelt County. No data available as to relative prevalence or loss.

North Carolina: Black rot and soft rot cause enormous losses in storage.

Tennessee: Black rot is very destructive, both in the field and storage house. It causes more loss than all the other diseases of sweet potatoes with the possible exception of the soft storage rot. The so-called charcoal rot is found along with black rot.

Root Rot caused by *Ozonium omnivorum*.

Occurs in Texas, New Mexico and Oklahoma. Loss probably 10%

Scurf caused by *Monilochaetes infuscans*.

Present wherever sweet potatoes are grown. Actual loss probably 1%, but the market value is reduced by the ugly appearance of the potato.

Storage Rots due to Several Fungi but Principally to *Rhizopus nigricans* and *Sphaeronema fimbriatum*.

Storage rots occur in winter and wherever sweet potatoes are stored in the United States. The annual loss varies from 10-50%.

Tomato Diseases:

Ohio: "*Alternaria* leaf spot has developed in rather an extreme manner on the early crop of tomatoes in the Marietta trucking district. In this district heretofore the leaf spot caused by *Septoria* has been frequent, but is almost absent at the present time. During the period of very hot weather, July 26-August 5, frequent reports of point rot of half grown or moderate sized fruits were received. The recent rains and cooler weather have resulted in more favorable conditions for the crop." -A. D. S.

South Carolina: Bacterial blight and *Fusarium* wilt of tomato very common and destructive. The *Septoria* leaf spot is also very prevalent and unusually destructive.

WINTER WHEAT

Bunt caused by *Tilletia foetens*, *T. tritici*.

Colorado: Abundant but not more so than last year. No regions free.

Missouri: Disease is locally reported. In some cases there is as much as 50% loss. St. Charles County seems to be comparatively free from bunt while much of the wheat in Jackson, Salina and Green Counties is affected.

New York: Further reports from New York show that in some infested wheat fields the amount of smut runs as high as 30%. Figures of definite percentage determinations are available from 100 fields. It is re-

ported that 45 fields are free from bunt and the remaining 55 are affected to the extent of 2%. The threshing of the wheat will doubtless reveal a still larger amount of bunt.

North Dakota: "*Tilletia foetens* used to be very prevalent in the state but is now very largely under control because of the universal use of seed treatment on the larger and older farms. There is always some smut in the various counties, because of newcomers, those short of help, or those who are shiftless and careless. Disease now mostly in the southwestern part of the state." -H. L. B.

Oregon: Reports from western Oregon state that there is considerable bunt in some fields the seed for which was treated. Barss thinks that perhaps this is due to infection from the soil last fall. The disease is present in comparatively small amounts in the Willamette Valley. It has been noted in abundance in eastern Oregon and in Jackson County.

South Dakota: The disease is practically under control. Probably 90% of the farmers treat seed with formalin. The western five-sixths of the state is practically free from the disease. It occurs in the eastern one-sixth and in occasional untreated fields.

Texas: Reports indicate bunt to be less than usual.

Loose Smut caused by *Ustilago tritici*.

Colorado: Not greatly abundant. Only a few cases have been noted.

Missouri: General over state but less than 1%. Occurs at Springfield, Edina, St. Charles, Marshall and Independence.

New York: New York has about fifty wheat fields that have been inspected and found to be free from loose smut. The work was carried on by the College of Agriculture, the New York State Food Supply Commission, and the Plant Disease Survey cooperating. The records are on file at Ithaca.

North Dakota: "Loose smut is appearently not showing as common in the heads this year as usual, though it has been observed in the wheat throughout the state. .001% to 1.5% is about the usual run as to intensity of seed infection. Could be controlled, but our farmers work on such a large scale they cannot use hot water method or seed plot method to advantage."

South Dakota: There is a little more of this disease than usual. None of the farmers treat their seed for this disease and it seems to be gaining. It occurs all over the state.

Texas: 2½% of crop injured.

Scab caused by *Fusarium culmorum*.

Missouri: None reported except at Columbia where it is common.

North Dakota: "Fusarium culmorum and other species of Fusarium are less abundant than last year. Last year it ran epidemic in the durum and marquis wheat, almost destroying these crops in some sections before the rust came. This year the disease showed up at seeding time, preventing sprouting of a percentage of seed and preventing proper stool formation thru'out the season, but on account of the dry harsh straw it did not reach the heads. The hot dry winds and lack of dew also prevented its spread from field to field." -H. L. B.

Oregon: Very little scab this season.

South Dakota: Comparatively little this year. Last year it destroyed one-third of the crop in eastern South Dakota and about one-fifth in western South Dakota. L. H. Pammel, on a recent field trip, found considerable scab in certain parts of South Dakota and western Minnesota. In the vicinity of Graceville, Minnesota, there was about 5%.

Leaf Rust caused by Puccinia triticina.

Missouri: Abundant at Springfield, Edina and Marshall.

North Dakota: Leaf Rust (Puccinia triticina) is not abundant this year. Not sufficiently abundant to interfere with P. graminis which started early on the Barberry bushes of Minnesota and spread evenly and rapidly over the state. On account of the dry weather and harsh growth of straw it produced little effect this year, but there was enough heavy early infection to destroy ordinary crops under ordinary weather conditions. North Dakota barberry bushes and hedges are being eradicated now.

Oregon: It is believed to be of economic importance when occurring on certain varieties of wheat.

South Dakota and West Minnesota: Considerable in places, especially on late wheat. The early wheat escaped.

Texas: Rusts practically absent in 1917 on all cereals, evidently because of dry winter and spring weather.

Yellow Stripe Rust caused by Puccinia glumarum.

Oregon: Very little damage has been noted as a result of the disease upon any of the cereals this year. This is doubtless due to the excessively dry season. It has been found in abundance upon certain of the wild grasses.

South Dakota: Disease observed by Dr. A. G. Johnson at Newell, S. D.

Black Chaff.

Dr. Smith furnishes the following statements respecting the bacterial disease of wheat described by him in the Journal of Agricultural Research, July 2, 1917.

"Including myself I have had 15 persons at work upon the problem this summer. Most of my own time has been given to it since the middle of May. We have this year found the new wheat disease in the following states: Texas, Oklahoma, Arkansas, Missouri, Kansas, Nebraska, Iowa, Wisconsin, Minnesota, North Dakota, South Dakota, Colorado, Montana, and California. The identification has depended not solely on the signs already described, but on these together with microscopic examinations which have shown the presence in the lesions of bacteria in great numbers, often unaccompanied by fungi, and on the fact that upon a great number of agar-poured plates made from interiors after surface sterilization we have always obtained the same organism, often in pure cultures. No doubt now remains as to the bacterial nature of this disease since we have not only isolated the same organism in the way described out of wheat from widely distant localities, but also from various parts of the plant -- diseased leaves, stems, glumes, and kernels, and with it have reproduced the disease both on spikelets and on young plants -- my last set of seedling inoculations (119 plants) gave 95 per cent of infections at the end of 8 days. Doubt remains, however, as to whether or not it is identical with the bacterial barley disease of Jones, Johnson and Reddy, for the clearing up of which we must await the appearance of their paper now in press. The most striking feature of this disease is the general prevalence of this organism on or in the wheat grains, thus making the disease admirably adapted for rapid dissemination. Not infrequently every shriveled kernel of a diseased head carries the bacteria either on its surface as a thin film, or in very great numbers in corroded cavities in the interior of the kernels. It is essential, therefore, not only to screen out all shriveled kernels from wheat designed for planting but also to devise some method of surface treatment for the remainder. The abundant oozing of the bacteria to the surface of diseased parts -- leaves, stems, rachis, glumes, awns,-- must also greatly favor transmission by birds and insects. For these reasons I can not believe that the disease has been in the country very long."